In the Claims:

1. (Currently amended) A system for communicating proprietary control information over one or more backplane connections, ~~between~~interconnecting two or more entities without functioning as a user interface, comprising:

first logic for storing the proprietary control information within a layer of a packet above the physical layer; and

second logic for communicating the packet, including the proprietary control information, over one or more of the backplane connections,

wherein the proprietary control information either replaces or appears in the packet as at least a portion of one or more standard packet fields.

2. (Original) The system of claim 1 wherein the control information is stored in at least a portion of one or more fields inserted into the packet by the first logic.

3. (Original) The system of claim 1 wherein the first logic overwrites at least a portion of one or more pre-existing fields in the packet with the control information.

4. (Original) The system of claim 1 wherein the two or more entities comprise a switch, and the control information is proprietary to the switch.

5. (Original) The system of claim 4 wherein the switch has ingress and egress ports.

6. (Original) The system of claim 5 wherein the proprietary control information comprises an identifier of an ingress port of the switch at which the packet was received over a network.

7. (Original) The system of claim 5 wherein the proprietary control information comprises an identifier of an egress port of the switch at which the packet will or is expected to be transmitted over a network.

8. (Original) The system of claim 5 wherein the proprietary control information comprises an indicator of whether or not one or more predetermined fields were present in the packet upon receipt thereof at the switch.

9. (Original) The system of claim 8 wherein the one or more predetermined fields comprise a VLAN.

10. (Original) The system of claim 1 wherein the control information is stored in layer two or higher of the packet according to the OSI reference model.

11. (Original) The system of claim 10 wherein the control information is stored in layer two of the packet according to the OSI reference model.

12. (Original) The system of claim 11 wherein the control information is stored in the MAC sub-layer of the packet.

13. (Original) The system of claim 12 wherein the control information overwrites at least a portion of a VLAN stored in the MAC sub-layer of the packet.

14. (Original) The system of claim 12 wherein the control information overwrites at least a portion of source or destination addresses stored in the MAC sub-layer of the packet.

15. (Original) The system of claim 9 wherein the VLAN comprises op code and tag portions, and the first logic overwrites the op code portion of the VLAN with the control information.

16. (Original) The system of claim 15 wherein the control information comprises an identifier of the VLAN op code overwritten by the control information.

17. (Original) The system of claim 9 wherein the VLAN is the outer VLAN of a plurality of nested VLANs.

18. (Original) The system of claim 1 wherein the control information comprises quality of service information for the packet.

19. (Original) The system of claim 18 wherein the quality of service information comprises an identifier of a queue for buffering the packet.

20. (Original) The system of claim 1 wherein the control information comprises an indicator that the packet is a candidate for dropping.

21. (Original) The system of claim 3 wherein the control information is communicated in-band over the one or more backplane connections.

22. (Original) The system of claim 1 wherein the first logic derives at least a portion of the control information from a packet header, and deletes the packet header prior to communication of the packet over the one or more backplane connections.

23. (Original) The system of claim 22 further comprising third logic for re-creating at least a portion of the packet header from the control information after communication of the packet over the one or more backplane connections.

24. (Currently amended) A method of communicating proprietary control information over one or more backplane connections, ~~between~~interconnecting two or more entities without functioning as a user interface, comprising:

storing the control information in a layer of a packet above the physical layer; and

communicating the packet, including the proprietary control information, over one or more of the backplane connections,

wherein the control information either replaces or appears in the packet as at least a portion of one or more standard packet fields.

25. (Original) The method of claim 24 further comprising storing the control information in at least a portion of one or more fields inserted into the packet to accommodate the control information.

26. (Original) The method of claim 24 further comprising overwriting at least a portion of one or more pre-existing fields in the packet with the control information.

27. (Original) The method of claim 24 wherein the two or more entities comprise a switch, and the control information is proprietary to the switch.

28. (Original) The method of claim 27 wherein the switch has ingress and egress ports.

29. (Original) The method of claim 28 wherein the proprietary control information comprises an identifier of an ingress port of the switch at which the packet was received over a network.

30. (Original) The method of claim 28 wherein the proprietary control information comprises an identifier of an egress port of the switch at which the packet will or is expected to be transmitted over a network.

31. (Original) The method of claim 28 wherein the proprietary control information comprises an indicator of whether or not one or more predetermined fields were present in the packet upon receipt thereof at the switch.

32. (Original) The method of claim 31 wherein the one or more predetermined fields comprise a VLAN.

33. (Original) The method of claim 29 wherein the proprietary control information comprises an indicator of a state of the ingress port of the switch at which the packet was received.

34. (Original) The method of claim 24 wherein the control information is stored in layer two or higher of the packet according to the OSI reference model.

35. (Original) The method of claim 34 wherein the control information is stored in layer two of the packet according to the OSI reference model.

36. (Original) The method of claim 35 wherein the control information is stored in the MAC sub-layer of the packet.

37. (Original) The method of claim 36 wherein the control information overwrites at least a portion of one or more fields stored in the MAC sub-layer of the packet.

38. (Original) The method of claim 37 wherein the one or more fields comprise a VLAN.

39. (Previously presented) The method of claim 37 wherein the one or more fields comprise source or destinations addresses.

40. (Original) The method of claim 38 wherein the VLAN comprises op code and tag portions, and the control information overwrites the op code portion of the VLAN.

41. (Original) The method of claim 40 wherein the control information comprises an identifier of the VLAN op code overwritten by the control information.

42. (Original) The method of claim 38 wherein the VLAN comprises the outer VLAN of a plurality of nested VLANs.

43. (Original) The method of claim 24 wherein the control information comprises quality of service information for the packet.

44. (Original) The method of claim 43 wherein the quality of service information comprises an identifier of a queue for buffering the packet.

45. (Original) The method of claim 24 wherein the control information comprises an indicator that the packet is a candidate for dropping.

46. (Original) The method of claim 24 wherein the control information is communicated in-band over the one or more backplane connections.

47. (Original) The method of claim 24 further comprising deriving the control information from a packet header, and deleting the packet header prior to communication of the packet over the one or more backplane connections.

48. (Original) The method of claim 47 further comprising re-creating at least a portion of the packet header from the control information after communication of the packet over the one or more backplane connections.

49. (Original) The system of claim 5 wherein the switch is a first switch, and the proprietary control information comprises an identifier of an ingress port of a second switch coupled to the first switch at which the packet was received over a network.

50. (Original) The method of claim 28 wherein the switch is a first switch, and the proprietary control information comprises an identifier of an ingress port of a second switch coupled to the first switch at which the packet was received over a network.

51. (Original) The system of claim 1 further comprising third logic for maintaining a mode bit having first and second states, wherein the first logic is configured to add one or more fields to the packet layer to accommodate the control information if the mode bit is in the first state, and overwrite at least a portion of one or more pre-existing fields in the packet layer with the control information if the mode bit is in the second state.

52. (Original) The method of claim 24 further comprising:

maintaining a mode bit having first and second states;

adding one or more fields to the packet layer to accommodate the control information if the mode bit is in the first state; and

overwriting at least a portion of one or more pre-existing fields in the packet layer with the control information if the mode bit is in the second state.

53. (Currently amended) A system for performing load balancing over a plurality of backplane connections between two or more entities, the system comprising:

first logic for receiving a packet at a first entity, mapping control information for [[a]]the packet into one or more identifiers of one or more of [[the]]a plurality of backplane connections coupling the first entity to a second entity, ~~the packet being received at a first entity coupled to a second entity through one or more backplane connections~~, [[and]]wherein the ~~translating~~ mapping occurs[[ring]] through a data structure configured to ~~allow translation of the control information for the packet into any of the one or more backplane connections coupling the first entity to the second entity~~achieve a desired load balancing of packets over the plurality of backplane connections; and

second logic for communicating the packet over the identified one or more backplane connections.

54. (Original) The system of claim 53 wherein the two or more entities comprise a switch, and the control information is an identifier of an ingress port at which the packet was received over a network, or an egress port at which the packet will or is expected to be transmitted over a network.

55. (Currently amended) The system of claim 54 wherein the first logic comprises a lookup table ("LUT") for maintaining an association between ingress or egress ports, and egress ports associated with the backplane connections, and the first logic maps a particular ingress or egress ports into one or more backplane-associated egress ports through an access to the LUT.

56. (Original) The system of claim 55 wherein the association is programmed into the LUT.

57. (Original) The system of claim 56 wherein the association is pre-determined to achieve a desired load balancing of packets over the plurality of backplane connections.

58. (Original) The system of claim 53 wherein the two or more entities are each ASICs.

59. (Currently amended) A method of performing load balancing over a plurality of backplane connections between two or more entities, the method comprising:

receiving the packet at a first entity coupled to a second entity through one or more backplane connections;

mapping control information for a packet into one or more identifiers of one or more of the plurality of backplane connections through a data structure configured

to ~~allow translation of the control information for the packet into any of the one or more backplane connections coupling the first entity to the second entity~~achieve a desired load balancing of packets over the plurality of backplane connections; and

communicating the packet over the one or more identified backplane connections.

60. (Original) The method of claim 59 wherein the two or more entities comprise a switch, and the control information comprises an identifier of an ingress port at which the packet was received over a network, or an egress port at which the packet will or is expected to be transmitted over a network.

61. (Currently amended) The method of claim 60 further comprising using a lookup table ("LUT") to maintain an association between ingress or egress ports and egress ports associated the backplane connections, and mapping an ingress or egress port into one or more of the backplane-associated egress ports through an access to the LUT.

62. (Original) The method of claim 61 further comprising programming the association into the LUT.

63. (Original) The method of claim 62 wherein the association is pre-determined to achieve a desired load balancing of packets over the plurality of backplane connections.

64. (Original) The method of claim 59 wherein the two or more entities are each ASICs.

65. (Original) A system for extending the number of ports of a switch comprising:

a first switch coupled to a second switch and having a greater number of ports than the second switch;

first logic for storing in a layer of the packet above the physical layer an identifier of a port of the first switch;

second logic for communicating the packet between the first and second switches.

66. (Original) The system of claim 65 wherein the port is an ingress port of the first switch at which the packet was received over a network, and the second logic communicates the packet from the first switch to the second switch.

67. (Original) The system of claim 65 wherein the port is an egress port of the first switch at which the packet will or is expected to be transmitted over a network, and the second logic communicates

the packet from the second switch to the first switch.

68. (Original) The system of claim 65 wherein the port identifier is stored in layer two or higher of the packet according to the OSI reference model.

69. (Original) The system of claim 68 wherein the port identifier is stored in layer two of the packet according to the OSI reference model.

70. (Original) The system of claim 69 wherein the port identifier is stored in the MAC sub-layer of the packet.

71. (Original) The system of claim 70 wherein the port identifier is stored in the packet in the form of one or more standard fields.

72. (Original) The system of claim 70 wherein the port identifier is stored in the packet as a VLAN.

73. (Original) A method of extending the number of ports of a network switch comprising:

providing a first switch coupled to a second switch and having a greater number of ports than the second switch;

storing in a layer of the packet above the physical layer an identifier of a port of the first switch; and

communicating the packet between the first and second switches.

74. (Original) The method of claim 73 wherein the port is an ingress port of the first switch at which the packet was received over a network, and the packet is communicated from the first switch to the second switch.

75. (Original) The method of claim 73 wherein the port is an egress port of the first switch at which the packet will or is expected to be transmitted over a network, and the packet is communicated from the second switch to the first switch.

76. (Original) The method of claim 73 wherein the port identifier is stored in layer two or higher of the packet according to the OSI reference model.

77. (Original) The method of claim 76 wherein the port identifier is stored in layer two of the packet according to the OSI reference model.

78. (Original) The method of claim 77 wherein the port identifier is stored in the MAC sub-layer of the packet.

79. (Original) The method of claim 78 wherein the port identifier is stored in the packet in the form of one or more standard fields.

80. (Original) The method of claim 79 wherein the port identifier is stored in the packet in the form of a VLAN.

81. (Currently amended) A system for communicating proprietary control information over one or more backplane connections, ~~between~~ interconnecting two or more entities without functioning as a user interface, comprising:

first means for mapping the proprietary control information for a packet into one or more identifiers of one or more of the plurality of backplane connections;

second means for storing the proprietary control information in a layer of the packet above the physical layer, wherein the control information either replaces or appears in the packet as at least a portion of one or more standard packet fields; and

third means for communicating the packet, including the proprietary control information, over the identified one or more backplane connections.

82. (Original) The system of claim 81 wherein the two or more entities comprise a switch, and the system further comprises means for extending the number of ports of the switch.

83. (Currently amended) A method of communicating proprietary control information over one or more backplane connections, ~~between~~ interconnecting two or more entities without functioning as a user interface, comprising:

a step for mapping proprietary control information for a packet into one or more identifiers of one or more of the plurality of backplane connections;

a step for storing the proprietary control information in a layer of the packet above the physical layer, wherein the control information either replaces or appears in the packet as at least a portion of one or more standard packet fields; and

a step for communicating the packet, including the proprietary control information, over the identified one or more backplane connections.

84. (Original) The method of claim 83 wherein the two or more entities comprise a switch, and the method further comprises a step for extending the number of ports of the switch.